MARKET AND INVESTMENT ANALYSIS

SOUTH WEST MEDICAL DATA SYSTEMS

Prepared for:

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MARKET AND INVESTMENT ANALYSIS
SOUTH WEST MEDICAL DATA SYSTEMS

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I. INTRODUCTION

I. INTRODUCTION

A. OBJECTIVES

- The objectives for this project are to:
  - Determine investment potential for LCS
  - Understand South West Medical Data Systems' (SWMD) Products & Customer Satisfaction
  - Determine Near-Term Potential Market for Claims Processing for HMOs, PPOs, TPAs, and self-insured companies
  - Evaluate the Competitive Environment and market potential for SWMD products and services

B. METHODOLOGY

- Information for this study was obtained from telephone interviews with the following categories of respondents:
  - Users of South West Medical Data Systems (referred to as SWMD or SWMD Systems)
  - Competitors of SWMD Systems
  - Third Party Administrators
  - Industry Associations
  - HMOs & PPOs
  - Self-Insured Companies
- INPUT designed separate questionnaires for each category of respondent.
- INPUT also used some secondary information provided to Litton Computer Systems by SWMD Systems.

C. INTERVIEW PROFILE

- INPUT conducted 31 telephone interviews.
- All were considered complete interviews and were conducted during February and March 1987.

- Persons interviewed varied with the type of organization.
  - INPUT generally interviewed managers/vice presidents of benefit management or claims processing at user organizations.
  - The vice president or director of marketing of competitors were interviewed.
  - INPUT interviewed association analysts, editors (of industry-specific periodicals published by the association), or the manager of research.
  - For prospective purchasers, managers of benefits administration or claims processing were interviewed. In two instances, data processing managers were interviewed.
- Exhibit I-1 shows the type of organizations surveyed and the number of survey respondents.

EXHIBIT I-1

SURVEY RESPONDENTS

Type of Respondent	Number of Respondents	Percent of Total Respondents
Existing Users	12	39%
Competitors	5	16%
Prospective Users	11	35%
Industry Associations and Editors	3	10%
TOTAL	31	100%

II. EXECUTIVE SUMMARY

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A. CONCLUSIONS

- SWMD Systems' product is flexible and easy to use. However, a major weakness is its report generation structure and format.

- Overall, SWMD Systems' service and support is weak. Specifically, software consulting and overall service is not responsive, and the company is slow in providing enhancements and upgrades.

- Industry associations do not perceive SWMD as a market leader. Competitors are either not aware of the Company or, worse, say that SWMD has many dissatisfied customers, although INPUT did not find many dissatisfied customers.

- The near-term potential in the HMO and PPO markets is very low in terms of number of installations and dollar sales potential. The greatest potential for SWMD Systems is companies with IBM mainframe-based claims processing.

- The competitive environment is characterized by entrenched competitors with extensive experience in selling to users of IBM mainframes. SWMD, although the leader in the Burroughs market, has a great deal to learn about the IBM mainframe marketplace.

B. RECOMMENDATION

- Following LCS' decision not to invest in SWMD Systems, INPUT recommends LCS not have any financial interest or involvement in SWMD Systems' IBM mainframe based software for the following reasons:

  - SWMD Systems is not sufficiently capitalized to improve its sales and customer support organizations.

  - Based on customer comments, questions about the long-term viability of SWMD Systems must be raised.

  - LCS does not want to be in a position of having an undercapitalized company controlling their destiny.

- Should LCS reconsider its investment decision and spend sufficient funds to improve customer service and sales, INPUT recommends proceeding with caution.

- Target markets must be carefully selected. The best niche, based on limited research, is companies who self insure. In-depth research is required to confirm the presence of a long sales cycle and limited repeat business.

III. MARKET ANALYSIS

III. MARKET ANALYSIS

A. MARKET SIZE

- INPUT divides the market for health care claims processing into four key segments. Exhibit III-1 shows the number of U.S.-based organizations in each segment.

- Currently, more than 23 million persons are enrolled in HMO-sponsored programs. Just 43 organizations, each with enrollments greater than 100,000 persons, account for slightly more than one-half of total HMO enrollment. See Exhibit III-2.

- Most HMOs fit into one of two categories -- less than two years old or greater than ten years old. For the distribution of HMOs on the basis of years in business, please refer to Exhibit III-3.

- PPOs currently number 536, handling medical care for 41.6 million Americans. According to Exhibit III-4, only 33 PPOs have more than 100,000 members.

B. TRENDS & ISSUES

Trends

- According to the Health Insurance Association, the leading U.S. health insurer is no longer the commercial health insurance companies or Blue Cross/Blue Shield. Forty percent of private businesses now use self insurance.

- More companies doing self insurance, with claims handled in-house or by a third-party administrator.

- Fewer companies are paying premiums directly to insurance companies; rather they are electing to self-insure, or join an HMO or PPO.

Issues

- Medical providers must contain costs. Claims administration, while not the major medical cost, can be substantial especially for HMOs and PPOs.

- Customer satisfaction is becoming a key issue. Patients will no longer tolerate poor service since alternative delivery means exist.

EXHIBIT III-1

MARKET SIZE
ORGANIZATIONS PROCESSING HEALTH CARE CLAIMS

(As of December 1986)

Type of Organization	Number of U.S. Organizations
HMOs	595
PPOs	536
TPAs	3,000
Self Insured Companies	7,000 to 8,000 Companies with More Than 1,000 Employees
Self Insured Companies	73,000 Companies with 100 to 1,000 employees

Sources: Health Insurance Association
Interstudy (Minneapolis, MN)

EXHIBIT III-2

MARKET SIZE -- HMOs
(As of December 1986)

Persons Enrolled	Number of Organizations	Total Enrollment
Less than 4,999	185	336,833
5,000 - 14,999	130	1,176,767
15,000 - 24,999	63	1,219,919
25,000 - 49,999	107	3,790,800
50,000 - 99,999	67	4,828,262
More than 100,000	43	12,311,045
TOTAL	595	23,663,626

Source: Interstudy
Minneapolis, MN

EXHIBIT III-3

YEARS IN BUSINESS -- HMOs
(As of June 1986)

Years in Business	Number of Organizations
< 1 Year	171
1 - 2 Years	159
3 - 5 Years	81
6 - 9 Years	78
> 10 Years	106
TOTAL	595

Source: Interstudy
Minneapolis. MN

EXHIBIT III-4

PPO MARKET DEMOGRAPHICS
(As of December 1986)

- Total PPOs: 536
- Average enrollment: 73,723

Enrollment	Number of Organizations
More than 500,000	12
100,000 - 500,000	21
All other categories	503
TOTAL	536

Source: American Medical Care and Review Association

- Closely related to service is claims turnaround time. A push is now on to shorten claims processing time.

- As a result of demographic trends, the proportion of retirees to current workers is growing rapidly. More retirees will require more medical care, thus burdening systems not set up to handle growth in its patient base.

- Legislation
  - Changes to Medicare
  - COBRA

C. FACTORS FOR VENDOR SUCCESS

- First and foremost, vendors must fully understand their customers' claims processing requirements. This understanding should be reflected in the functionality, features, and ease of use of application software.
  - Customers prefer their vendors have a claims administration perspective, including all levels of management reporting.
  - Unfortunately, most software vendors generally offer only the perspective of software developed from flow charts, lacking any management perspective.

- Customers want their vendors to have gained some experience in claims processing.
  - The experiences can be those of the principals or other key software house employees.
  - Experience through a partnership with an HMO, PPO, TPA, or self insured company is necessary to provide credibility and gain reference account sales.

- An active user group, with semi-annual meetings and constant feedback to vendor senior management, is a necessary condition for success. Having a user group, in and of itself, is not a success factor. Rather, listening to group recommendations and priorities helps make a software vendor successful.

- As in any vertical market, successful vendors will have established reference accounts and demonstrable knowledge of the market; both technical and business experience are required.

- As the market has matured, the quality of management reports has become a key product differentiator. Two important reports include:

  - Peer review

  - Resource utilization review

- No matter how good the product or service, a successful vendor will have some market presence, name recognition, or "visibility," gained chiefly through:

  - Conferences

  - Trade shows

  - Advertising in trade periodicals

D. MARKET SIZE

Overall Market Data

- Cost of administering health programs: $19 billion in 1984 (Source: U. S. Department of Health & Human Services)

- Charges to companies for processing claims ranges from $2.50 to $15.00 per employee per month, depending primarily on the number of employees at the company

- The cost of processing each employee claim (all types) ranges from $1.75 to $3.00 (1984).

HMOs

- Total HMOs: 595 (6/86)

- Total HMO enrollment (6/86): 23.67 million

PPOs

- Total PPOs: 536 (12/86)
- Total PPO enrollment (12/86): 29 million (Source: AMCRA)

TPAs

- Total TPAs (Available Market): 3,000 (6/86)

Self-Insured Companies

- Total Self Insured Companies (Available Market):
  - 7,000 to 8,000 Companies with >1,000 employees
  - 73,000 Companies with 100 to 1,000 employees

E. ADDRESSABLE MARKET

1. HMOs

Enrollment Size	DP Exp as % of Prem Inc	Persons Enrolled	Number of HMOs
< 5,000	4%	0.34 M	185
5,000 - 14,999	3%	1.18 M	130
15,000 - 24,999	2%	1.22 M	63
25,000 - 49,999	2%	3.79 M	107
50,000 - 99,999	2%	4.83 M	67
> 100,000	4%	12.31 M	43
	TOTAL	23.67 M	595

Source: AMCRA

	HMO
TOTAL MARKET	595 HMOs
AVAILABLE MARKET	280 HMOs
ADDRESSABLE MARKET	62 HMOs

Total Market

- Use Association data, shown above

Available Market

- HMOs with less than 15,000 members would not use a mainframe; available market narrowed to 280.
- HMOs buy a slightly larger system than needed at time of purchase to allow for growth in patient base.
- Consolidation of two or more medium-size HMOs now using minicomputers will lead to the purchase of a mainframe-based system.
- Transportable operating systems (Pick & UNIX) are extending the range of systems available. A low end mainframe can be bought from one vendor; then higher performance systems can be brought from another vendor without obsoleting the application software.

Addressable Market

- Less: Organizations currently using competitors' IBM-based application software: 175
- Less: Organizations using non-IBM mainframes: 35
- Less: Organizations using timesharing: 8
- Equals: HMO Addressable Market: 62

Alternate Approach to Addressable Market

"Top Down" Approach	
Category	Amount
U.S. expenditures for IS in health care vertical sector in 1986	$2,129 Million
HMO expenditures represent 19.5% of total expenditures	$ 415 Million
Claims administration equals 15-20% of total HMO administrative expenditures	$ 73 Million

"Bottom Up" Approach	
Category	Amount
Total HMO enrollment	23.67 Million
X Per capita claims administration fee	$ 3.00
Estimated HMO expenditures for claims processing	$71 Million

HMO ADDRESSABLE MARKET
(Millions of Dollars)

Category	Amount
Reconciliation of Top Down/Bottom Up ($71 + $73) / 2 =	$72 Million
Less: Minicomputers' Share	($14 Million)
Less: Mainframe Competitor Share	($16 Million)
Less: Non-IBM Mainframes Share	($ 8 Million)
Less: Timesharing Share	($ 5 Million)
Equals: Addressable Market	$29 Million

2. PPOs

Enrollment Size	Number of PPOs
< 5,000	106
5,000 - 14,999	155
15,000 - 24,999	105
25,000 - 49,999	92
50,000 - 99,999	45
100,000 - 500,000	21
> 500,000	12
TOTAL	536

Source: INPUT (based on AMCRA data)

PPO	
TOTAL MARKET	536 PPOs
AVAILABLE MARKET	275 PPOs
ADDRESSABLE MARKET	85 PPOs

Total Market

- Based on above data

Available Market

- PPOs with less than 15,000 members would not use a mainframe; available market narrowed to 275.
- PPOs, similar to HMOs, need approximately 100,000 members to justify the expenditure for application software. (Source: AMCRA)
- PPOs buy a larger system than needed at the time of purchase to allow for growth in their patient base.
- Consolidation of two or more medium-size PPOs using minicomputers will lead to the purchase of a mainframe-based system.

Addressable Market

- Organizations currently using competitors' IBM based application software: 145
- Organizations using non-IBM mainframes: 35
- Organizations using timesharing: 10
- PPO Addressable Market: 85

Alternate Approach to Addressable Market

"Top Down" Approach	
Category	Amount
U.S. expenditures for IS in health care vertical sector in 1986	$2,129 Million
PPO expenditures represent 9.5% of total expenditures	$ 202 Million
Claims administration equals 35% of total PPO administrative expenditures	$ 72 Million

"Bottom Up" Approach	
Category	Amount
Total PPO enrollment	29 Million
X Per capita claims administration fee	$ 4.00
Estimated PPO expenditures for claims processing	$116 Million

PPO ADDRESSABLE MARKET
(Millions of Dollars)

Category	Amount
Reconciliation of Top Down/Bottom Up ($72 + $116) / 2 =	$94 Million
Less: Minicomputers' Share	($52 Million)
Less: Mainframe Competitor Share	($16 Million)
Less: Non-IBM Mainframes Share	($ 4 Million)
Less: Timesharing Share	($ 3 Million)
Equals: Addressable Market	$19 Million

3. TPAs

Number of Lives	Number of TPAs
< 50,000	1,800
50,000 - 149,999	690
150,000 - 249,999	240
250,000 - 499,999	150
500,000 - 999,999	70
> 1,000,000	50
TOTAL	3,000

Source: INPUT (based on AMCRA data)

	TPA
TOTAL MARKET	3,000 TPAs
AVAILABLE MARKET	1,200 TPAs
ADDRESSABLE MARKET	180 TPAs

Total Market

- Based on above data

Available Market

- TPAs with less than 50,000 members would not use a mainframe; available market is reduced from 3,000 to 1,200 TPAs.
- TPAs will buy a larger system than needed at time of purchase to allow for growth in their patient base.
- Consolidation of two or more small/medium-size TPAs using minicomputers will lead to the purchase of a mainframe-based system.

Addressable Market

- Organizations currently using competitors' IBM mainframe-based application software: 95
- Organizations using non-IBM mainframes: 115
- Organizations using minicomputers: 810
- Number of TPAs in Addressable Market: 180

Alternate Approach to Addressable Market

"Top Down" Approach	
Category	Amount
U.S. expenditures for IS in "Other industries" vertical sector in 1986	$2,129 Million
TPA expenditures represent 21.5% of total expenditures	$ 166 Million
Claims administration equals 90% of total TPA administrative expenditures	$ 150 Million

"Bottom Up" Approach	
Category	Amount
Total TPA enrollment	35.5 Million
X Per capita claims administration fee	$ 4.50
Estimated TPA expenditures for claims processing	$160 Million

TPA ADDRESSABLE MARKET
(Millions of Dollars)

Category	Amount
Reconciliation of Top Down/Bottom Up ($150 + $160) / 2 =	$155 Million
Less: Minicomputers' Share	($65 Million)
Less: Mainframe Competitor Share	($40 Million)
Less: Non-IBM Mainframes Share	($ 8 Million)
Less: Timesharing Share	($20 Million)
Equals: Addressable Market	$22 Million

4. Self-Insured Companies

- Total Self Insured Companies
  - 7,000 to 8,000 Companies with >1,000 employees
  - 73,000 Companies with 100 to 1,000 employees

Self-Insured Companies	
TOTAL MARKET	82,000 Self-Insured Companies
AVAILABLE MARKET	14,000 Self-Insured Companies
ADDRESSABLE MARKET	2,415 Self-Insured Companies

Total Market

- Based on above data

Available Market

- Purchase of mainframe computers (and application software) by self insured companies will follow the number of company employees. Accordingly, mainframes will be purchased by companies with more than 500 employees. (14,000 companies)

Addressable Market

- Organizations using minicomputers: 8,500
- Consolidation of two or more self-insured companies using minicomputers will lead to the purchase of a mainframe-based system
- Organizations using non-IBM mainframes: 2,000
- Target: Larger self insured companies likely to already have a mainframe installed: 2,500
- Organizations currently using competitors' IBM-based application software: 250
- Organizations using timesharing services: 35
- Number of Self Insured Companies in Addressable Market: 2,415

Alternate Approach to Addressable Market

"Top Down" Approach	
Category	Amount
U.S. expenditures for IS in "human resources cross industry" vertical sector in 1986	$1,731 Million
Expenditures for self-administration represent 37% of total expenditures	$ 640 Million
Claims administration equals 75% of total self-insured companies' administrative expenditures	$ 464 Million

"Bottom Up" Approach	
Category	Amount
Number of employees covered by organizations with:	
Greater Than 1,000 Employees	15.5 million
Less Than 1,000 Employees	22.8 million
X Per capita claims administration fee:	
Greater Than 1,000 Employees	$ 1.75
Less Than 1,000 Employees	$ 2.75
Estimated expenditures for claims processing by self-insured companies	($325 + $752) $1,077 million

TPA ADDRESSABLE MARKET
(Millions of Dollars)

Category	Amount
Reconciliation of Top Down/Bottom Up ($464 + $1,077) / 2 =	$770 Million
Less: Minicomputers' Share	($290 Million)
Less: Mainframe Competitor Share	($210 Million)
Less: Non-IBM Mainframes Share	($ 95 Million)
Less: Timesharing Share	($ 45 Million)
Equals: Addressable Market	$130 Million

IV. ANALYSIS OF SURVEY FINDINGS

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A. USERS' PURCHASE CRITERIA

- "Flexibility" is the most frequently mentioned #1 user purchase criterion.
- Other primary user purchase criteria mentioned include: Reporting capabilities; integrated system; comprehensiveness of product; proven system; Burroughs compatibility; user friendly; processing speed; capabilities for PPOs
- Flexibility and price/value issues were the most frequently mentioned #2 and #3 user purchase criteria.
- Other secondary user purchase criteria mentioned include: Service; "fully adjudicated"; screen (vs. menu) driven; accuracy; performance/speed; user friendly; integrated reports; tailored for PPO administration; based on relational DBMS; vendor financial strength; expandability; a "proven" system

B. SALES COVERAGE

- Clients learned about SWMD Systems through (in decreasing order) consultants, referrals from other companies, and through Burroughs Corporation sales representatives.
- In only one case did the buyer learn about the Company through a sales call by a SWMD sales representative.
- SWMD Systems is not getting in the bid process. The most active bidders include: RIMS and ERISCO/Noble Lowndes. Benetics and CIC were then mentioned.
- Other firms mentioned in the bid process include: Benefacts, Lawson & Associates, CDC, McAuto, Travelers, and Fred James & Company.
- RIMS and ERISCO have successfully established significant market presence which enables them to be considered in competitive bid situations.
- Overall, SWMD Systems' sales efforts have not been very effective.

C. ASSOCIATIONS' PERCEPTIONS OF LEADING SOFTWARE VENDORS

- INPUT asked association staff members to mention top vendors in the health claims processing market. Two requests were made -- one was "open ended;" the other specifically asked the respondent to name vendors headquartered in California.

- Software vendors serving the HMO market include: ERISCO, CSC/Comtec, CyCare, and Collier-Jackson.

- Association members only listed Jurgovan & Blair as a key vendor serving the PPO market.

- The TPA market was served by: CG Data, Resource Information Management Systems (RIMS), Dyer, Wells & Associates, and Advanced Systems Associates (ASA).

- According to Association respondents, the following companies targeted self insured companies: ERISCO/Noble Lowndes and Tesseract.

- Furthermore, SWMD Systems was not mentioned in end user surveys of leading vendors conducted by the Group Health Association of America.

- These results further validate SWMD Systems' lack of marketing emphasis.

D. SWMD PRODUCT STRENGTHS

- INPUT asked an "open ended" question of users to list the strengths of SWMD Systems' software. Twelve users provided the following responses.

- "Flexibility," followed by "ease of use" and "designed for PPO administration" were mentioned most frequently as product strengths.

- Other mentions (one each) include: Handling of TPA claims; runs on Burroughs hardware; advances in claims, billing, workers comp, COBRA; designed for sophisticated users; automated coordination of benefits; unspecified technological considerations; uses relational DBMS; and system capacity.

- Overall, the software is designed to meet a wide range of user requirements for those users running Burroughs hardware.

E. SWMD PRODUCT WEAKNESSES

- INPUT asked an "open ended" question of users to list the weaknesses of SWMD Systems' software. Twelve users provided the following responses.

- One-half of the respondents indicated a weak report generation structure or format, a major weakness in view of the importance of management reporting capability. While this weakness may stem, in part, from weaknesses in Burroughs system software, it remains a major weakness nonetheless.

- Less significant product-related weaknesses include: The software cannot handle the functions of a diversified company or HMO functions; a longer initial setup due to use of a relational DBMS (but ultimately worth the wait).

- Overall, report generation weaknesses are significant, since management reporting capabilities are a key factor for success.

F. OTHER SWMD WEAKNESSES

- Other significant weaknesses include: Lack of responsiveness by the company or its service/consulting areas and a lack of support by the support staff.

- Less significant other weaknesses include: slow software enhancements/upgrades; the company is growing too fast; and one customer claims to have been treated as "a second class citizen"

- Overall, glaring weaknesses prevail in marketing related indicators such as lack of responsiveness, lack of support, and poor customer treatment.

- In summary, product and other strengths outweigh SWMD Systems' weaknesses.

G. DESIRED PRODUCT FEATURES OR SERVICES

- One-half of existing users of SWMD Systems software wanted better support/service.

- Other product features or services desired include: Faster delivery of software enhancements; workers compensation software; comprehensive management reports; more adjudication; better use of CPU's capabilities or improved runtime efficiency

H. USER PERCEPTIONS OF SOFTWARE PRICING

- Software was very reasonably priced. In fact, everyone said it would cost $100,000 to $2-3 million to develop comparable software in-house.
- Not one respondent said SWMD Systems' software was overpriced.
- SWMD Systems should re-evaluate its initial software and support pricing.

I. USERS' IMPRESSION OF SWMD SYSTEMS' SERVICE BUREAU

- Two of twelve respondents use SWMD's service bureau.
- According to both, pricing is competitive.
- They would like to see SWMD Systems offer:
  - Services for physician groups operating as an HMO
  - Comprehensive management reporting

J. COMPETITIVE ENVIRONMENT

1. The following vendors were identified as leaders in the market segment indicated:
   - HMOs/PPOs: SEAKO; Jurgovan & Blair; Computer Sciences Corporation/Comtec Division; CyCare
   - TPAs: CG Data; RIMS; Dyer Wells; Tesseract; ASA
   - Self Insured Companies: ERISCO; Dyer Wells

2. Competitors indicated that the most important feature desired by their customers is:
   - Ease of use/user friendly
   - Sophisticated claims processing
   - Cost containment features
   - Reporting capability

3. Overall, competitors had limited knowledge of SWMD Systems. Three of four respondents indicated they had not heard of them; the other respondent said they had a nice system for TPAs but also had a lot of unhappy customers. In summary, this is a poor showing for SWMD.

4. Litton Computer Services asked that we investigate the importance of integrated software modules. Based on the survey results, integrated software is not an issue since nearly everyone offers integrated packages. Only CyCare's software is not fully integrated.

5. According to the INPUT survey, the following vendors sell IBM mainframe-based claims processing software:
   - ERISCO/Noble Lowndes
   - Advanced System Applications
   - Dyer, Wells & Associates
   - General Data Systems, Ltd.
   - Informatics General
   - Tesseract

6. INPUT learned that:
   - Jurgovan & Blair is writing software to run on IBM 4381/30XX mainframes
   - ERISCO is porting software from IBM mainframes to the new 9370 superminicomputer

7. Most of SWMD Systems' main competitors:
   - Is a division of a larger company or an insurance carrier
   - Has a relatively large installed base
   - Has strong market presence and name recognition
   - Possesses good to excellent customer service and support
   - Has an active user group

APPENDICES

APPENDIX A
QUESTIONNAIRE TABULATION

CURRENT USERS

Market issues

- 4 mentions each
  - * Increased medical costs
  - * Legislation (COBRA; Birthday rule)
  - * Changes in overall economy
- 1 mention each
  - * More retirees
  - * Turnaround time for claims processed
  - * Handle increasing volumes of claims with good turnaround
  - * More companies are self insuring
  - * Growth in HMOs reduces opportunities in TPA market

Purchase criteria

- # 1 mentions
  - * 3 mentions: Flexibility
  - * 1 mention each
    - Reporting capabilities
    - Comprehensiveness of product
    - Burroughs compatible
    - Processing speed
    - User friendly (for data entry staff)
    - PPO capabilities
    - Integrated system
    - Proven system
- # 2 and # 3 mentions
  - * 2 mentions each
    - Flexibility
    - Price/value
  - * 1 mention each
    - Service
    - Fully adjudicated
    - Screen, not menu, driven
    - Accuracy
    - Performance/speed
    - Turnkey package
    - User friendly
    - Integrated reports
    - Tailored for PPO administration
    - Based on DBMS software
    - Vendor financial strength
    - Expandability
    - Proven system

Strengths of SWMD Systems products

- 4 mentions: Flexibility
- 3 mentions: Ease of use
- 2 mentions: Designed for PPO administration
- 1 mention each:
    * Handling of TPA claims
    * Runs on Burroughs hardware
    * Advances in claims, billing, workers comp, COBRA
    * Designed for sophisticated users
    * Automatic coordination of benefits
    * Bill reduction
    * Technological considerations
    * Based on relational DBMS
    * Capacity

Weaknesses of SWMD Systems Products

- 6 mentions: Report generation structure/format
- 3 mentions:
  - * Lack of support (by support staff)
  - * Lack of service/consulting responsiveness
- 2 mentions:
  - * Company growing too fast
  - * Slow software enhancements and upgrades
- 1 mention each:
  - * Cannot handle functions for diversified company
  - * No HMO functions available
  - * "Treated as a second-class citizen"
  - * Longer initial setup than expected (since based on a relational DBMS)

Other vendors evaluated

- 5 mentions each: ERISCO; RIMS
- 2 mentions: Benetics; CIC

Found out about SWMD Systems through:

- 4 mentions: Consultant;
- 3 mentions: Referral from other users; through Burroughs
- 1 mention: Prior experience; through RFP process

SWMD Systems understands your business:

- "Very well": 8
- "Good": 1
- "Pretty good": 1
- "Very well except for service/support": 1
- "HMO setup is a problem": 1

Did software customization meet your expectations?

- Yes: 7 (1 indicated it took too long)
- No: 2
- Not applicable: 1
- No response: 2

Competitiveness of Pricing

- Very competitive: 7
- Probably competitive: 2
- Competitive: 1
- Exceptionally competitive: 1
- No Response: 1

Purchase method

- Purchased: 9
- Leased then purchased: 1
- Leased: 0
- No response: 1
- Not applicable: 1

APPENDIX B
QUESTIONNAIRE TABULATION

COMPETITORS

Three most important features

- # 1 responses
  - * Ease of use/user friendly - 1
  - * Sophisticated claims processing - 1
  - * Cost containment features - 1
  - * Reporting capability - 1
- # 2 and # 3 responses
  - * Training - 1
  - * Support - 1
  - * On-line (vs. batch) operation - 1
  - * Ease of use - 1
  - * COBRA - 1
  - * Data analysis - 1
  - * Cost management - 1

Impressions of SWMD Systems

- "Never heard of them"/"Don't know them" - 3
- "Nice TPA system, but a lot of unhappy customers" - 1

Product Opportunities

- High quality workers compensation software
- Management reporting
  * In-patient hospitalization
  * Pharmacy tracking
  * Physician comparison/review
- Pre-admission certification
- Features using DBMS capabilities

Integrated software

- "Only CyCare's software is not integrated; therefore, it is not an issue."

Top vendors

- HMO
  - * Jurgovan & Blair
  - * SEAKO
  - * Computer Sciences Corporation/Comtec Division
  - * CyCare

- TPA
  - * CG Data
  - * RIMS
  - * Insurance companies who have purchased software houses
  - * Dyer, Wells
  - * Tesseract
  - * ASA

- Self Insured Companies
  - * Dyer, Wells
  - * ERISCO

APPENDIX C
QUESTIONNAIRE TABULATIONS

THIRD PARTY ADMINISTRATORS

Systems/Services Currently Used

- Turnkey - 1 (RIMS)
- Application S/W running on Own Hardware - 8
  - IBM System/34 - 2
  - Qantel - 4
  - IBM System/38 - 1
  - IBM 4331 - 1

TPA's Plans to Change Delivery Modes

- No - 9
- Yes - 0

Purchase Criteria

- In-house Control - 4
- Cost Savings - 3
- Confidentiality of Data/Operations - 2
- Availability of Software Customization - 2
- Software Was Purchased to Run on Installed Hardware - 1
- Fully Integrated System - 1
- Management Reporting Capabilities - 1

Features Desired

- Improved Report Generation (RIMS user)
- Ability to Track Hospital Stays (IBM System/34)
- Improved Billing System (Qantel)

APPENDIX D

COMMENTS BY ASSOCIATIONS AND EDITORS

- Association: American Medical Care & Review Association
- Association Clients: HMOs; PPOs; TPAs
- Spoke with: Ed Pickens, Research Manager
- Date: March 1987

- Market
  - 25-30% annual growth rate in membership
  - HMO membership
    * 2 years ago: 10-12 million
    * As of 6/86: 23 million
    * As of 12/86: 25 million
    * Forecast (12/87): 32 million
  - PPO membership
    * PPOs started in 1983; were first sized in 1985
    * 1985: 6 million
    * 1986: 28-30 million
  - Membership (12/1986): 60 million (U.S.)
  - Membership (1990): 80-120 million
  - Average HMO/PPO membership (12/86): 40,000
  - Average claims/person/year: 6
- Economics of the HMO/PPO business
  - Breakeven: 20,000 members
  - Average: 40,000 members
  - Largest: Kaiser Permanente members; 5% growth
    * Northern Calif: 1.8 million
    * Southern Calif: 1.8 million
- Growth of Market
  - Regulatory issue: Cost containment
  - Many new vendors
- System Requirements
  - Storage capacity
    * Must hold all on-line medical records
  - Processing speed
  - Number of terminals supported
  - Additional HMO/PPO requirement: Pay bills for the organization!
  - High quality (complete) management reporting software

- Key Vendors
  - CSC/Comtec
  - Jurgovan & Blair (Rockville, MD)
  - Note
    * Ed said that Comtec and Jurgovan & Blair together have more than 200 HMO clients

- Delivery Modes
  - Turnkey systems
    * Very hot; market is adding 150-200 PPOs/HMOs per year; since there is no time to develop software and there must be a processing capability from day one

  - Installed hardware (In decreasing order):
    * H-P
    * IBM
    * DEC (Right now -- hot company!)
    * Honeywell
    * Burroughs
    * Tandy (really! -- although these systems are outgrown rapidly)
    * Note
      - An association survey revealed that >50% of respondents had changed systems in past 2 years or will change systems within next 2 years
    * Systems installed are volume dependent and explosive growth of HMO/PPO exceeded most optimistic forecasts. There is constant pressure on the organizations to upgrade computer systems to match (or lead) the growth in its subscriber base.

  - Remote Computing Service
    * Used mainly by new, small organizations
    * However, becomes more economical to move to in-house processing around 10,000 members

  - Application software
    * Very few doing their own software
    * Need 100,000 members to justify expenditures (Ed has seen $3 million software packages)
    * Major area is moving applications from one mainframe to subsystems to handle all the processing requirements

- Information Services spending
  - Average: 5% of overall budget (includes personnel)
  - TPAs: Not required to keep extensive medical information; therefore, spending will be less

- Factors for Success for IS Vendors
  - Experience or HMO/PPO partner
  - Reference sell
  - Management Reports
    * Peer review
    * Utilization review
    * Topics: Number of visits per patient, charges
      Hospital resources utilized

- Association: Group Health Association of America (GHAA)

- Clients: HMOs

- Spoke with: Faith Lymon; Associate Editor; Group Health News
  Stephen English; research analyst, who is compiling results of a recent HMO survey

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Faith

- Issues
  - Employer data demands
    * Utilization
    * Cost per patient

  - "Equal contribution" rule
    * Currently, employers must pay the same to an HMO as they pay to a traditional carrier or self-insurance plan. Reagan administration is seeking to repeal this rule as part of its deregulation efforts.
    * Effect: Employer is free to contribute to HMOs with no floor on contributions. In essence, the employee's share of contribution could rise to whatever level the employer requests. In reality, not much is likely to happen since health care is intended as a benefit, not a potential source of friction.

- Growth of HMOs
  - Dramatically! In past year, growth in number of HMOs was 22% (Source: Interstudy; Minneapolis). However, realize "enrollment/HMO" is not increasing as rapidly.

Steven

- Survey demographics
  - sent 410 surveys; received 20% response

- Hardware
  - Mainframes: 37%
  - Minis: 63%
  - Micros: None

- Software vendors mentioned in survey
  - Avant Health Management
  - Business Systems International
  - Collier-Jackson
  - Compucare
  - CyCare
  - Delphi Associates/Tingley Systems
  - Digital Insurance Systems Corporation
  - Diversitec
  - John Hancock
  - Jurgovan & Blair
  - MAI/Basic 4
  - Medi-Sec
  - MSA
  - MSI
  - Orbis
  - RIMS
  - Synergy Health Systems
  - Worth-Auger Associates

- Interests in next 5 years
  Note: Number of respondents in each category not indicated
  - LANs: 56%
  - Relational DBMS: 60%
  - 4GL: 46%
  - Other: 4%

- Problems (Open ended question)
  - Application SW does not address functions needed by HMOs
  - Bugs/malfunctions
  - HW configuration is not sufficiently powerful
  - HW maintenance
  - Application SW maintenance
  - Disputes with vendors over contract coverage
  - Efficiency of in-house HMO DP staff
  - User knowledge & their compliance with systems procedures

APPENDIX E

COMMENTS FROM HMOs & PPOs

- Observations are Based on a Limited Sample Size

- Observations
  - Large HMOs/PPOs buy small mainframes or large minicomputers to handle claims processing
  - HMOs/PPOs require sufficient on-line data storage capacity to handle medical records as well as claims information
  - HMOs/PPOs founded before 1980 have grown sufficiently or merged with other organizations to now require a larger system
  - Nationwide organizations, such as HealthAmerica, do virtually all data processing centrally on a large mainframe